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P211 -Sleep quality in renal transplant recipients: an analysis using the Pittsburgh Sleep Quality Index

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Purpose: The subject of sleep is increasingly being recognised as a lifestyle contributor to overall health. Sleep quality has been linked to hypertension, diabetes, stroke, and cardiovascular disease (CVD) risk (1). This is an important consideration in renal transplant recipients (RTRs) as cardiovascular and cerebrovascular diseases remain the leading cause (24%) of mortality in RTRs according to the latest UK Renal Registry Annual Report. Despite the evidence of a high prevalence of sleep disorders in chronic kidney disease (CKD)(2), few studies have explored the sleep quality of RTRs (3–6), especially its differing components and its relation to kidney function.

We explored whether kidney function was associated with sleep quality and whether sleep components differed between high and low kidney function (low defined as CKD stages 3b to 5) in RTRs.

Method: 16 RTRs (12 male; mean \pm SD; age 49 \pm 10 years; eGFR 53 \pm 20 ml/min/1.73m²) completed the Pittsburgh Sleep Quality Index (PSQI), a 19-item self-administered questionnaire assessing sleep quality over a 1-month interval (7). Seven component scores are generated that are equally weighted on a 0-3 scale, 0 indicating “better” and 3 indicating “worse”. Global PSQI score is yielded by summing the seven components. Global PSQI >5 is considered poor sleep quality. The Pearson correlation coefficient was used to assess the association between eGFR and global PSQI. Kidney function was categorised into low and high eGFR (\leq 44 [n=5, age 50 \pm 4 years; eGFR 32 \pm 9] and >44 [n=11, age 48 \pm 13 years; eGFR 62 \pm 16] ml/min/1.73m², respectively). Group differences were compared using Mann-Whitney tests presented as median (25-75%).

Results: A moderate negative association between kidney function and global PSQI was observed (Figure 1, $r = -.565$, $p = 0.023$), inferring a decline in kidney function is associated with poorer sleep quality. The median global PSQI score was 7.0 (6.5–10.5) for low eGFR and 4.0 (2.0–4.0) for high eGFR ($p = 0.002$). Scores for each PSQI component are shown in Table 1 for both groups. Significantly higher (or “worse”) component scores were seen for sleep disturbance ($p = 0.002$), sleep efficiency ($p = 0.026$) and daytime dysfunction ($p = 0.040$) in low eGFR RTRs.

Conclusion: Declining kidney function was associated with poorer sleep quality, with RTRs with low eGFR exhibiting greater sleep disturbance and daytime dysfunction, and poorer sleep efficiency than those with higher eGFR. Despite encouraging improvements in post-transplant quality of life and sleep-related issues such as restless leg syndrome and sleep apnoea (3), it appears that sleep quality remains impaired in RTRs especially those with lower kidney function. Further evidence is needed to establish the severity of poor sleep quality in RTRs and its link with CVD risk as this may provide a therapeutic target to help reduce CVD morbidity and mortality.